

REMARKS

Claims 1-29 are pending in the application.

Claims 1-29 have been rejected.

Claims 1 and 29 have been amended.

Rejection of Claims under 35 U.S.C. § 103(a): Lu in view of Takatori

Claims 1-3, 5, 6, and 8 stand rejected under 35 U.S.C §103(a) as being unpatentable over Lu, U.S. Patent No. 5,412,652 (Lu) in view of Takatori et al., U.S. Patent No. 5,550,805 (Takatori).

Claim 7 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Lu in view of Takatori and further in view of Shah et al., U.S. Patent No. 5,646,936 (Shah).

Claims 9-11 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Lu in view of Takatori and further in view of Shioda et al., U.S. Patent No. 5,537,393 (Shioda).

Claims 1 and 29 have been amended to provide additional clarity.

With respect to the reference cited, Applicant submits that Lu, in view of Takatori, fails to show, teach or suggest “restoring the transmittal of protect channel data, wherein the restoring includes: applying a mesh restoration protocol to the communications network to restore the transmittal of the protect channel data,” as recited in claim 1.

The non-final Office Action dated December 18, 2003 states that Lu, in column 13, line 61 to column 14, line 3, discloses restoring the transmitting of protect channel data, “wherein restoring includes applying a restoration protocol to the communications network to restore the transmittal of the protect channel data (a protocol is used to recovery [*sic*] from the failure and the network is restored to its previous state, thus the

protect channel is restored.)” Applicant responded to the foregoing argument by noting that Lu does not “teach the possibility of restoring protect channel traffic because Lu’s protect channel only carries preemptable traffic that does not need to be restored”, and therefore, Lu fails to even recognize the need to “restore the transmittal of the protect channel data.”

The final Office Action, again citing column 13, line 61 to column 14, line 3, states: “Since Lu discloses restoring the network back to its previous state and the previous state included transmitting ‘Extra Data’ on the protection path, Lu does show restoring the transmittal of protect channel data.” Column 13, line 61 to column 14, line 3 of Lu reads as follows:

“[N]ormal traffic is recovered without reprovisioning the SONET ring. That is, after the failure has been rectified, the ring table stored in the nodes are utilized to *recover or restore the normal traffic*; even for the nodes directly affected by the failure. If the failure causes a node to lose the ring table, that node can request and receive the ring table from a neighboring node (as the ring tables stored in each of the nodes are identical). Therefore, full recovery and autoprovisioning is realized after the hardware failure is eliminated.” (emphasis added)

In the citation above, Lu does not show or teach ‘restoring the network back to its previous state’ and ‘restoring the transmittal of extra data’, as asserted by the Office Actions. With respect to the ‘full recovery’ mentioned by Lu, both the foregoing paragraph and the remainder of Lu’s disclosure leads to the understanding that ‘full recovery’ refers to a restoration of the normal traffic to the working channels, not a restoration of the network to its previous state (including data previously carried on protect channels).

Furthermore, restoring the normal traffic does not include restoring the extra traffic, which is apparent in light of the distinction Lu makes between normal traffic and extra traffic: “Protection channels are used for restoring normal traffic when a node failure or fiber cut occurs. Otherwise, the protection channels do not carry normal traffic, but they may carry extra traffic.” (column 8, lines 30-35). Therefore, Lu does not show, teach or suggest “restoring the transmittal of protect channel data”, as recited in claim 1.

Applicant does not concede that Lu discloses any restoration of the transmittal of extra data; however, Applicant submits that if even if Lu did suggest the restoration of the transmittal of extra data, such a restoration would not restore the extra data that was on the protect channel at the time of the disruption in the working channel. As noted by the Final Office Action, “Lu teaches that when a working path fails, the data is then transmitted on a protection path, such that ‘Extra Data’ that was being transmitted on the protect path is preempted.” Lu does disclose ring tables that minimize the number of protection channel needed to implement a restoration; however, the ‘extra traffic must be dropped’ on a minimum number of protect channels (the protect channels used in the restoration). (column 13, lines 1-8). Therefore, the extra data that was being transmitted on the protect channel at the time of the transmission failure is preempted and dropped, and would not be available for restoration.

The Final Office Action emphasizes that claim 1 recites “restoring the *transmittal* of protect channel data”, and states that this means “the claim does not recite that the protect channel data itself is protected.” As amended, Claim 1 clearly recites that the protect channel data itself is protected. Amended claim 1 recites “restoring the transmitting of *the* protect channel data, wherein the restoring includes applying a mesh restoration protocol to the communications network to restore the transmittal of *the* protect channel data.” Antecedent basis for ‘the protect channel data’ is found in

‘including a protect channel transmitting protect channel data.’ Therefore, the protect channel data restored by applying the mesh protocol is the same protect channel data that was on the protect channel at the time of the disruption in the working channel. In other words, the claimed invention provides protect channel data, such that the “PCA traffic (protect channel data) is protected from network failures.” (specification page 17, lines 6-7).

In contrast, Lu states that “extra traffic is not protected.” (column 8, lines 35-40). Instead of protecting extra traffic, Lu preempts and drops the extra traffic. Thus, the extra traffic of Lu is not protected by a mesh protocol or any other type of protocol. Clearly, Lu does not show, teach or suggest protection of the protect channel data, as claimed in claim 1.

Takatori does not remedy the foregoing deficiencies of Lu. Takatori discloses a network with spare capacity that is used to carry working data when the working capacity experiences a transmission failure; otherwise, the spare capacity does not usually transmit data. (column 2, lines 5-7). Because the spare capacity does not usually carry extra data, Takatori could not be expected to, and in fact, does not show, teach or suggest the need to restore data being transmitted on the spare capacity. Therefore, neither Takatori nor Lu shows, teaches, or suggests “restoring the transmittal of protect channel data, wherein the restoring includes: applying a mesh restoration protocol to the communications network to restore the transmittal of the protect channel data,” as claimed in claim 1.

The Office Action states that the motivation to combine Lu with Takatori is found in the “knowledge generally available to one of ordinary skill in the art” because “it is known in the art that mesh networks are used to increase reliability of a system.” Applicant respectfully disagrees. In the dictionary cited by the Office Action, the definition of ‘Mesh Network’ states that ‘a mesh network *might* be constructed for

greater reliability.’ Adding a mesh network to another network might or might not increase the reliability of any given network; however, even if the mesh network could increase the reliability of a particular network, the motivation to implement the mesh network is lacking when the disadvantages of implementing the mesh network outweigh the advantages of implement the mesh network.

Such is the case with adding the mesh network of Takatori to the ring network of Lu. An increase in reliability might or might not be gained by implementing a mesh network in Lu. On the other hand, Lu discloses a network that uses ring tables to recover from working channel failures. Integrating a mesh network into Lu’s ring network would undermine the utility of the ring tables, thus undermining the reliability of Lu’s network and negating any advantages gained by implementing the mesh network. Furthermore, mesh networks can be costly to build and maintain. One of skill in the art would find no motivation to include a mesh network in Lu’s system because the disadvantages of implementing such a network clearly outweigh any advantages gained thereby.

The Office Action also suggests that one of ordinary skill in the art would find motivation to implement Takatori’s mesh network in Lu because Lu involves making networks more reliable through the use of working and protect channels. Applicant submits that the opposite is true. One of skill in the art would not find motivation to provide additional reliability through implementing a mesh network in Lu because Lu already provides the desired reliability through using protection channels.

In light of the foregoing discussion, Applicant respectfully submits that claim 1 clearly distinguishes over Lu, taken alone or in any permissible combination with Takatori. Applicant therefore respectfully submits that independent claim 1, as well as claims 2, 3 and 5-11, which depend on claim 1, are allowable for at least the foregoing

reasons. Accordingly, Applicant respectfully submits that claims 1-3 and 5-11 are in condition for allowance.

Rejection of Claims under 35 U.S.C. § 103(a): Shioda in view of Takatori

Claims 12-18, 20-25, and 27-29 stand rejected under 35 U.S.C §103(a) as being unpatentable over Shioda in view of Takatori. With respect to the references cited, Applicant submits that Shioda, in view of Takatori, fails to show, teach or suggest “restoration of protect channel data,” as recited in claim 12.

The final Office Action suggests that in Shioda, the “restoration of protect channel data” occurs when data being transmitted on a protect channel is erroneously transmitted on a working channel. According to Shioda, a double transmission failure causes a protect channel to be erroneously connected to a working channel, thus transmitting protect channel data down the working channel. As a result, the protect channel data is transmitted to the wrong destination. Applicant submits that an erroneous channel connection resulting in protect channel data being sent to the wrong destination is not a restoration of the protect channel data. When data is restored after a network transmission failure, the restoration performed results in the data being transmitted to the destination for which the data was originally destined. The operation referred to in Shioda, which is not a restoration, causes data to be transmitted to the wrong destination. Therefore, Shioda does not show, teach or suggest, nor is Shioda even capable of, the “restoration of protect channel data,” as claimed in claim 12.

As noted above, Shioda does not teach “restoration of protect channel data.” However, even if Shioda’s erroneous connection between a working channel and a protect channel did provide “restoration of protect channel data,” one of skill in the art

would find no motivation to combine Takatori with Shioda to provide “*mesh* restoration of protection channel data.” This is because Shioda’s disclosure focuses on ways to correct the erroneous connection, not on how to make the erroneous connection more reliable. Moreover, nothing would be gained by implementing Takatori’s mesh network in Shioda’s erroneous connection. In fact, combining Shioda and Takatori in the manner suggested by the Office Action would only result in mesh restoration network that transmits protection channel data to the wrong destination. One of skill in the art would find no motivation to provide such a result. Furthermore, any other permissible combination of Shioda and Takatori would fail to show, teach or suggest the limitations of claim 12.

Applicant also submits that the arguments showing the lack of motivation for combining Lu and Takatori also apply to the combination of Shioda and Takatori. Therefore, it would not have been obvious to one of skill in the art at the time of the invention to combine Shioda and Takatori to provide restoration of protect channel data, as claimed in claim 12.

Accordingly, Applicant respectfully submits that claim 12 clearly distinguishes over Shioda, taken alone or in any permissible combination with Takatori. Applicant submits that these arguments apply with equal force to claims 21 and 29. Applicant therefore respectfully submits that independent claims 12, 21 and 29, as well as claims 13-20 and 22-28, which depend on claims 12 and 21, are allowable for at least the foregoing reasons. Accordingly, Applicant respectfully submits that claims 12-29 are in condition for allowance.

Rejection of Claims under 35 U.S.C. § 103(a): Lu in view of Takatori and Nemoto

Claim 4 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Lu in view of Takatori and further in view of Nemoto, U.S. Patent No. 5,506,833 (Nemoto). Applicant submits that Lu, in view of Takatori and further in view of Nemoto, fails to show, teach or suggest “restoration of protect channel data,” as claimed in claim 12.

Claim 4 recites that the restoring [the transmitting of protect channel data] further includes: “finding one or more alternate channels to transmit the protect channel data, the one or more alternate channels including connected working and protect channels.” Nemoto discloses a system with a ‘secondary spare unit.’ As shown in Fig. 11 of Nemoto, the secondary spare unit is not a channel within “one or more alternate channels including connected working and protect channels.” Nemoto’s alternate channels include the spare channels and the secondary spare channel, but not the working channels. (see Fig. 11). Therefore, the one or more alternate channels in Nemoto only include spare (protect) channels. Thus, Nemoto fails to show, teach or suggest “finding one or more alternate channels to transmit the protect channel data, the one or more alternate channels including connected working and protect channels,” as recited in claim 4.

Furthermore, one of skill in the art would not find any motivation in the cited references or in the knowledge generally available to one of ordinary skill in the art to combine the references of Lu, Takatori and Nemoto. One of skill in the art would not find motivation to provide additional reliability to Lu through adding a mesh network (Takatori) and a secondary protect channel (Nemoto) to Lu because Lu already provides the desired reliability through using primary protect channels. Therefore, it would not have been obvious to one of skill in the art at the time of the invention to combine Lu, Takatori and Nemoto to provide the limitations of claim 4.

Accordingly, Applicant respectfully submits that claim 4 clearly distinguishes over Lu, taken alone or in any permissible combination with Takatori and Nemoto. Applicant therefore respectfully submits that independent claim 4 is allowable for at least the foregoing reasons. Accordingly, Applicant respectfully submits that claim 4 is in condition for allowance.

CONCLUSION

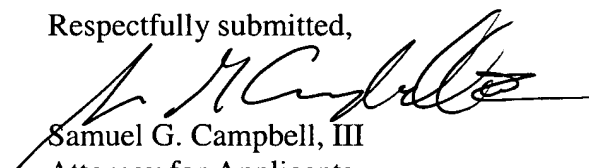
In view of the amendments and remarks set forth herein, the application is believed to be in condition for allowance and a notice to that effect is solicited. Nonetheless, should any issues remain that might be subject to resolution through a telephonic interview, the Examiner is invited to telephone the undersigned at 512-439-5084.

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